

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 0315-638/POA	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. <b>PCT/US2008/006397</b>	International filing date (day/month/year) <b>19 MAY 2008 (19.05.2008)</b>	(Earliest) Priority Date (day/month/year) <b>18 MAY 2007 (18.05.2007)</b>
Applicant <b>EMERSON CLIMATE TECHNOLOGIES, INC. et al</b>		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed  
☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

- b. ☐ This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).  
 c. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.  
☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.  
☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. 13  
☐ as suggested by the applicant.  
☒ because the applicant failed to suggest a figure.  
☐ because this figure better characterizes the invention.  
 b. ☐ none of the figure is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2008/006397**A. CLASSIFICATION OF SUBJECT MATTER****F04B 49/035(2006.01)**, **F04B 49/00(2006.01)**, **F04C 18/02(2006.01)**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 8 : F04B, F04C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Korean Utility models and applications for Utility models since 1975  
Japanese Utility models and applications for Utility models since 1975Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
eKIPASS(KIPO internal) & keywords: "scroll", "compressor", "capacity", "motor", "speed", "range", "modulation", "pulse", "width", "cycle", and "ratio"**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2001-518601 A (COPELAND CORP.) 16 October 2001 See paragraphs 16-38; figures 5-15.	1-20
A	US 2005/0244277 A1 (PHAM, H. M. et al.) 03 November 2005 See claims 1-10; figures 1-12.	1-20
A	US 6,213,731 B1 (DOEPKER, R. J. et al.) 10 April 2001 See claims 1-5; figures 1-16.	1-20
A	KR 10-2005-0088765 A (WOORI COMPANY CO., LTD.) 07 September 2005 See claims 1-4; figures 1-4.	1-20

☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

\* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family


Date of the actual completion of the international search

08 SEPTEMBER 2008 (08.09.2008)

Date of mailing of the international search report

08 SEPTEMBER 2008 (08.09.2008)

Name and mailing address of the ISA/KR

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2008/006397

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2001-518601 A	16.10.2001	AU 1998-93087 A1	23.04.1999
		AU 748946 B2	13.06.2002
		BR 9812560 A	01.08.2000
		CN 1238674 C	25.01.2006
		CN 1272171 A	01.11.2000
		CN 1308633 C	04.04.2007
		CN 1607478 A	20.04.2005
		CN 1664372 A	07.09.2005
		CN 1664473 A	07.09.2005
		CN 1664475 A	07.09.2005
		CN 1920305 A	28.02.2007
		CN 1952813 A	25.04.2007
		DE 69833266 C0	06.04.2006
		DE 69833266 T2	10.08.2006
		EP 1025403 A1	09.08.2000
		EP 1025403 B1	18.01.2006
		EP 1489368 A2	22.12.2004
		EP 1489368 A3	01.06.2005
		EP 1598611 A2	23.11.2005
		EP 1598612 A2	23.11.2005
		EP 1598613 A2	23.11.2005
		EP 1598614 A2	23.11.2005
		EP 1598615 A2	23.11.2005
		ES 2256958 T3	16.07.2006
		KR 10-2001-0030754 A	16.04.2001
		KR 10-2003-0079877 A	10.10.2003
		US 2001-002239 A1	31.05.2001
		US 2001-045097 A1	29.11.2001
		US 2001-049942 A1	13.12.2001
		US 2002-178737 A1	05.12.2002
		US 2003-084672 A1	08.05.2003
		US 2003-089119 A1	15.05.2003
		US 2003-094004 A1	22.05.2003
		US 2004-123612 A1	01.07.2004
		US 2006-288715 AA	28.12.2006
		US 2007-022771 AA	01.02.2007
		US 6047557 A	11.04.2000
		US 6393852 BB	28.05.2002
		US 6408635 B1	25.06.2002
		US 6438974 B1	27.08.2002
		US 6449972 BB	17.09.2002
		US 6467280 BB	22.10.2002
		US 6499305 BB	31.12.2002
		US 6662578 BB	16.12.2003
		US 6662583 BB	16.12.2003
		US 6679072 BB	20.01.2004
		WO 99-17066 A1	08.04.1999

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2008/006397

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005-0244277 A1	03.11.2005	EP 1751430 A2	14.02.2007
		KR 2007004932 A	09.01.2007
		US 2006-0232577 A1	19.10.2006
		WO 2005-111425 A2	24.11.2005
		WO 2005-111425 A3	29.03.2007
US 6213731 B1	10.04.2001	AU 2000-59472 A1	12.04.2001
		AU 768192 B2	04.12.2003
		BR 200004334 A	24.07.2001
		CN 1183327 C	05.01.2005
		CN 1289011 A	28.03.2001
		CN 1510273 A	07.07.2004
		CN 1995756 A	11.07.2007
		DE 60032033 C0	15.02.2007
		DE 60032033 T2	10.05.2007
		EP 1087142 A2	28.03.2001
		EP 1087142 A3	26.06.2002
		EP 1087142 B1	15.03.2006
		EP 1619389 A2	25.01.2006
		EP 1619389 A3	29.03.2006
		ES 2257270 T3	01.08.2006
		JP 2001-099078 A2	10.04.2001
		KR 2001050527 A	15.06.2001
		KR 2006064580 A	13.06.2006
		PA 00009021 A	08.03.2002
		TW 481735 A	01.04.2002
KR 102005088765 A	07.09.2005	None	